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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/922,041	08/03/2001	Larry H. Gass	INTL-0506-US (P10475)	7270

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BLAKELY SOKOLOFF TAYLOR & ZAFMAN  
12400 WILSHIRE BOULEVARD  
SEVENTH FLOOR  
LOS ANGELES, CA 90025-1030

EXAMINER
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NGUYEN, MINH DIEU T

ART UNIT	PAPER NUMBER
2137	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/922,041

Applicant(s)

GASS ET AL.

Examiner

Minh Dieu Nguyen

Art Unit

2137

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 8-12, 22-26, 30 and 31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5-7, 13-19, 21, 23, 27 and 29 is/are rejected.
- 7) ☒ Claim(s) 2, 4, 20 and 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. Claims 1-31 are pending.

#### ***Election/Restrictions***

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-7, 13-23 and 27-29, drawn to a method, system and instructions in a medium for performing a secure firmware upgrades, classified in class 713, subclass 164.
  - II. Claims 8-12, 22-26 and 30-31, drawn to method, system and instructions in a medium for performing first public key upgrade and using the second public key if receiving a power loss/failure while upgrading the first public key in the firmware upgrades, classified in class 713, subclass 193.

The inventions are distinct, each from the other because of the following reasons:

3. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention II has separate utility such as receiving a power loss or power failure while upgrading a first public key and using a second public key to subsequently upgrade the firmware program. See MPEP § 806.05(d).

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4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Ed Taylor on August 1, 2005 a provisional election was made with traverse to prosecute the invention of I, claims 1-7, 13-23 and 27-29. Affirmation of this election must be made by applicant in replying to this Office action. Claims 8-12, 22-26 and 30-31 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### ***Claim Objections***

6. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 19, 22-30 have been renumbered as claims 22-31.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 3, 5-7, 13-18, 21, 23, 27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angelo et al. (5,748,940) in view of Falik et al. (2002/0166061).

a) As to claims 1, 13 and 27, Angelo discloses a secure updating of non-volatile memory comprising identifying a firmware upgrade request by a firmware program (i.e. a flash bit set to indicate a flash update will occur, col. 3, lines 3-6); retrieving a file signed with a private key (Fig. 3, element 310); validating a file with a public key (Fig. 3, element 312; col. 3, lines 39-52); upgrading a portion of the firmware program by the firmware program (Fig. 3, element 316).

Angelo does not disclose locking a device storing the firmware program such that a second portion of the firmware program is not readable.

Falik discloses an apparatus and method for protecting the contents of a shared memory in a memory device comprising a step of locking a device storing the firmware program such that a second portion of the firmware program is not readable (page 2, paragraph [0015]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the use of locking device storing the firmware program such that a second portion of the firmware program is not readable in the system of Angelo as Falik teaches so as to prevent access to the firmware by unauthorized users.

b) As to claims 3 and 23, Angelo as modified above discloses identifying a firmware upgrade request by a firmware program further comprising reading a flag, wherein the flag is located in a non-volatile medium (Fig. 1, element 120; i.e. flash bit) and determining that the flag is set (col. 2, lines 6-8).

c) As to claims 5 and 29, Falik as modified above discloses locking flags is utilized to implement software protection for each flash memory device blocks (page 1, paragraph [0014]; i.e. determining that the file is not authentic and locking the device).

d) As to claim 6, Falik as modified above discloses locking the device after upgrading a portion of the firmware program by the firmware program (page 9, paragraph [0111]; page 11, paragraph [0122]).

e) As to claim 7 and 14, Angelo as modified above discloses the second portion of the firmware program is a public key (col. 3, lines 39-52).

f) As to claim 15, Angelo as modified above discloses the firmware program further clears the upgrade flag (col. 2, line 8).

g) As to claim 16, Angelo as modified above discloses a persistent storage, wherein the file is located in the persistent storage (col. 2, lines 56-59).

h) As to claim 17, Falik as modified above discloses a network interface for connecting the system to a network, wherein the file is retrieved from the network (page 6, paragraph [0063]).

i) As to claim 18, Angelo as modified above discloses the firmware program comprising a second portion further comprising a minimal boot portion (Fig. 3, element 306); a signature authentication portion (Fig. 3, element 312) and a write device portion (Fig. 3, element 316).

j) As to claim 21, Falik as modified above discloses the device is a flash memory (page 6, paragraph [0063]).

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Angelo et al. (5,748,940) in view of Falik et al. (2002/0166061) and further in view of Spiegel et al. (6,711,675).

Angelo and Falik do not disclose the portion of the firmware program further comprising a hardware initialization portion, an operating system loader portion and a device lock-out portion.

Spiegel discloses a protected boot process that resists tampering with the boot sequence comprising a portion of the firmware program further comprising a hardware initialization portion, an operating system loader portion (col. 1, lines 38-43) and a device lock-out portion (col. 2, line 49 – col.3, line 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the use of having a portion of the firmware program further comprising a hardware initialization portion, an operating system loader portion and a device lock-out portion in the system of Angelo and Falik as Spiegel teaches so as to protect boot information from unauthorized tampering.

***Allowable Subject Matter***

10. Claims 2, 4, 20 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Conclusion**

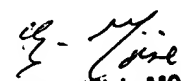
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Dieu Nguyen whose telephone number is 571-272-3873. The examiner can normally be reached on M-F 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on 571-272-3865. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2100.

Minh Dieu Nguyen  
Examiner  
Art Unit 2137

mdn  
8/5/05

  
EMMANUEL L. MOISE  
SUPERVISORY PATENT EXAMINER